



**EDISON ELECTRIC
INSTITUTE**

June 11, 2007

Jon Heinrich
Department of Natural Resources
Bureau of Air Management
P.O. Box 7921
Madison, WI 53707

Dear Mr. Heinrich:

On behalf of the Edison Electric Institute (EEI), the purpose of this transmittal is to provide a statement for inclusion in the record for the proposed revisions by the Wisconsin Department of Natural Resources (DNR) to NR 446 and as a follow-up to the March 2007 Natural Resources Board meeting.

EEI is the association of U.S. shareholder-owned electric companies. Our members serve 95 percent of the ultimate customers in the shareholder-owned segment of the industry, and represent approximately 70 percent of the U.S. electric power industry. We also have as Affiliate members more than 65 International electric companies, and as Associate members more than 170 industry suppliers and related organizations.

Many states and affected companies are in the process of deciding how to comply with the U.S. Environmental Protection Agency's (EPA) Clean Air Mercury Rule (CAMR). CAMR reflects nearly 15 years of deliberation culminating in a four-year rulemaking. The scientific record underlying the final rule is one of the most detailed for any regulation undertaken under the Clean Air Act. In summary, the CAMR cap-and-trade approach is the best regulatory mechanism to reduce mercury emissions from coal-based power plants and to effectively minimize utility-contributed mercury to the environment.

Accordingly, EEI's statement addresses the efficacy of a cap-and-trade program to reduce emissions of mercury and the limited availability of mercury controls for the fleet of U.S. coal-based power plants. EEI believes that the timelines and cap-and-trade program adopted in the federal CAMR represent a better overall approach for improving air quality in the State of Wisconsin, without unnecessarily hurting the state's economy.

One important advantage of CAMR is that the rule offers a more reasonable timeframe than the stringent citizen petition for the installation of the emissions control equipment

Mr. Jon Heinrich
June 11, 2007
Page Two

necessary for implementation and compliance. The federal agencies and organizations primarily involved in mercury control RD&D programs – U.S. Department of Energy, EPA, the Electric Power Research Institute and the University of North Dakota's Energy and Environmental Research Center – assert that mercury-specific controls are far from mainstream application.

Finally, CAMR's cap-and-trade program is an efficient and flexible approach for states. Adoption of the federal program will minimize interstate conflicts and create a consistent regulatory framework for states and regulated sources, which will reduce impacts on related state resources. Ultimately, this flexibility translates into a low-cost option for the states' electric consumers – households, small businesses, and industries – while achieving significant reductions in mercury emissions and deposition.

In closing, thank you for the opportunity to provide input to the Wisconsin DNR on such an important public policy matter. If you have any questions, please contact me at 202-508-5516 or mrossler@eei.org.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael T. Rossler", with a stylized flourish at the end.

Michael T. Rossler
Manager, Environmental Programs

Attachment

**STATEMENT OF THE EDISON ELECTRIC INSTITUTE
WISCONSIN'S PROPOSED MERCURY RULES
JUNE 11, 2007**

The Edison Electric Institute (EEI) appreciates the opportunity to submit this statement for the record.

The Edison Electric Institute is the association of U.S. shareholder-owned electric companies. Our members serve 95 percent of the ultimate customers in the shareholder-owned segment of the industry, and represent approximately 70 percent of the U.S. electric power industry. We also have as Affiliate members more than 65 International electric companies, and as Associate members more than 170 industry suppliers and related organizations.

The Wisconsin Department of Natural Resources (DNR) has proposed revisions to NR 446, which requires each utility with coal-fired electrical generating units affected by the federal Clean Air Mercury Rule (CAMR) to meet an annual mercury emission cap. At the March 2007 Natural Resources Board meeting, DNR staff proposed the following changes to the state's mercury rules:

- Require that the state rule be consistent with CAMR standards.
- Compliance with the CAMR would require each Wisconsin utility with affected coal-fired power plants to meet an annual mercury emission cap without participating in the U.S. Environmental Protection Agency's (EPA) national trading program.
- Adopt rules by June 10, 2010 aimed at a 90 percent mercury reduction at all coal-fired power plants. Incentives will also be developed to encourage early achievement of the 90 percent reduction by January 1, 2020.

In addition to authorizing hearings on NR 446, the board also requested that the agency offer additional options for reducing mercury, which include:

- Reducing mercury emissions by 90 to 95 percent by January 1, 2012, from all coal burning electrical generating units in the state as requested in a citizen petition.
- Participating in EPA's optional national mercury allowance trading and banking program to achieve the reductions required in CAMR.
- Participating in EPA's national allowance trading and banking program that would sunset on Jan. 1, 2015, which would allow Wisconsin utilities to participate for five years in the national trading and banking program from the inception of the first reduction phase of the CAMR (January 1, 2010).

It will be extremely difficult for the 48 units in Wisconsin to comply with the citizen petition, which would impose a stringent emissions limit in a short time frame. The petition appears to be based on an inaccurate assessment of the current status of mercury control technology research and the availability of mercury-specific controls, and does not take into account current research which indicates that trading will not cause increases in local deposition.

This statement addresses the efficacy of a cap-and-trade program to reduce emissions of mercury and the limited availability of mercury controls for the fleet of U.S. coal-based power plants. EEI believes that the standards and the cap-and-trade program of the federal CAMR represents a better overall approach for improving air quality and the economy in the State of Wisconsin.

Significant Progress Has Been Made In Air Quality

The U.S. electric power sector has reduced air emissions substantially over the last three decades despite large increases in the use of coal to generate electricity. U.S. electric companies already have cut SO₂ by more than 40 percent, with significant reductions over the past 10 years due primarily to implementation of the Clean Air Act's (CAA) Acid Rain Program. U.S. utilities also have reduced NO_x emissions by almost 50 percent since 1980, attributable to installation of controls to meet the CAA's Acid Rain Program requirements and other programs in the Northeast to address ozone.

Despite the fact that there are no commercially available technologies designed exclusively for control of mercury emissions from all coal-based power plants, currently installed pollution controls for particulates, NO_x and SO₂ already capture about 40 percent of the 75 tons of mercury that enters power plants in the coal. Electric utilities in the U.S. release about 48 tons of mercury per year, which is about 40 percent of total anthropogenic emissions of mercury in the U.S., and about one percent of total global mercury emissions.

The electric power sector has done all of this despite a steady climb in electricity demand, and without sacrificing the reliability and affordability of the electricity that we produce. For example, between 1980-2003 electric generation from coal increased 67 percent. As such, when we examine our industry's emissions relative to the amount of electricity generated, *i.e.*, in terms of pounds of emissions per megawatt-hour of generation, we find that these rates for SO₂ and NO_x already have been reduced by approximately 70 percent since 1980, and the reductions will reach 90 percent through the implementation of the Clean Air Interstate Rule (CAIR).

Electric Companies Use a Diverse Mix of Fuels to Generate Electricity

Low-cost, reliable electricity results, in part, from our ability to utilize a variety of readily available energy resources – coal, nuclear energy, natural gas, hydropower, and new renewable energy resources such as wind and solar. Fuel diversity is key to affordable and reliable electricity. A diverse fuel mix helps protect consumers from contingencies such as fuel shortages or disruptions, price fluctuations and changes in regulatory practices. A diverse fuel mix takes advantage of regional differences in fuel availability that have evolved over many decades.

Coal fuels slightly more than 50 percent of the generation produced in the U.S.; it fuels about 69 percent of electricity generated in Wisconsin. This coal-based generation helps to keep the price of electricity down for consumers and businesses in Wisconsin, an extremely important issue in these financially challenging times.

Due in part to the complexity and uncertainty of existing clean air regulation, most new power plants built over the past decade throughout the nation have relied on natural gas to produce electricity. Limits on natural gas supply in the U.S. have contributed to high natural gas prices. As a result, the U.S. industrial sector, which relies heavily on natural gas, has seen an erosion of U.S.-based manufacturing jobs. The consistent regulatory framework provided by broad implementation of CAMR's cap-and-trade program will promote continued use of the nation's abundant and low-cost coal resources and alleviate pressure on the U.S. natural gas supply.

Cap-and-Trade is the Preferred Policy Option

National cap-and-trade programs are proven to be highly effective at reducing emissions at the lowest possible cost. The 1990 Clean Air Act Amendments included a ground-breaking provision, "Title IV, Acid Deposition Control", which is considered by many to be the most successful program in the history of the CAA. Title IV established a "market-based" or "emissions trading" program to reduce SO₂ that has greatly reduced costs to electric company customers, reduced emissions much faster than required, and garnered universal praise. Its high level of credibility is attributed to a near 100-percent compliance rate, precise emissions monitoring and reporting requirements, and penalties for failure.

EEI supports cap-and-trade as the preferred option for regulating electric power sector mercury emissions. A national cap-and-trade program is the most cost-effective means to achieve substantial mercury emission reductions from the power generation industry. A cap-and-trade program compels utilities to target reductions from the units where controls are most cost-effective, with a focus in almost all cases on the larger units with the highest emissions. This approach also provides the system-wide flexibility necessary to mitigate risk associated with trying innovative control technologies.

At the national level, a command-and-control policy would be far more expensive nationwide – yet less effective in reducing mercury emissions – than a national cap-and-trade approach. EPA's March 2005 Regulatory Impact Analysis of CAMR comparing the technology-based and cap-and-trade policy options that it proposed on January 30, 2004 shows the technology-based option to be significantly more expensive than the cap-and-trade system, even though both options would achieve similar levels of mercury emission reductions.

Another key benefit of a national cap-and-trade approach is that it will incorporate a larger pool of sources to ensure control technology investments target the most cost-effective emission reductions. Wisconsin actually could put itself at a disadvantage by promulgating a stringent state mercury emission rule, in that it may limit more cost-effective, out-of-state emission reductions. A federal cap-and-trade program ensures that the responsibility for implementing the CAA, and meeting air quality standards, is shared by the states and helps to reduce, if not eliminate, interstate conflicts.

To be most effective, any trading program should be allowed across the largest area possible to capture all possible efficiencies. If states were to opt out of CAMR's trading program the result would be a less efficient and comprehensive market-based program. A shallow market could allow relatively few participants to influence allowance prices. In

addition, a constrained market may lead to more conservative decisions by the electric utility industry with regard to installing emission controls, thereby driving up the cost of compliance.

The bottom line: a cap-and-trade program does not allow a company to escape emission reductions; it merely allows those emission reductions to be made in a more cost-effective manner.

Time is Needed to Develop Mercury Controls

One important advantage of CAMR is that the rule offers a more reasonable timeframe than the stringent citizen petition for the installation of the emissions control equipment necessary for implementation and compliance. CAMR is designed to complement CAIR. Units are projected to install SCR and scrubbers to meet their SO₂ and NO_x requirements under CAIR and take additional steps to address the remaining mercury reduction requirements under CAMR, including adding mercury-specific control technologies, additional scrubbers and SCR, dispatch changes, and coal switching.

Briefly, regarding mercury-specific controls, sufficient time is needed to implement any regulatory program because mercury control technologies and emission monitoring equipment are not yet "commercially available" for the diverse fleet of boilers in the U.S. While there continues to be impressive research progress, there also exists minimal operational experience and limited vendor guarantees.

The Department of Energy (DOE), which is conducting a comprehensive, multi-year mercury control technology development program, stated in a May 2005 summary of results that "[a]dditional research is needed on all of these mercury control technologies so that coal-fired power plant operators eventually have a suite of control options available in order to cost-effectively comply with the CAMR."¹ In an April 2006 statement from DOE on the readiness of technologies for controlling mercury emissions from coal-fired power plants DOE still cautions that "there remain a number of critical technical and cost issues that need to be resolved through additional research before these technologies can be considered commercially available for all U.S. coals and the different coal-fired power plant configurations in operation in the United States."²

EPA, in its March 2005 update³ on the status of mercury control technologies, states that mercury-specific controls capable of removal levels between 60-90% won't be available for commercial application until after 2010. EPA notes further "that broad scale commercial application of control technology to remove mercury will be possible after the technology is available. Therefore, initiation of a potential national retrofit program could take place after the technology is available and such a program would take a number of years to fully implement." Even now, EPA still asserts that "several mercury-specific control technologies are in various stages of development, testing, and

¹ <http://www.netl.doe.gov/technologies/coalpower/ewr/pubs/mercuryR%26D-v4-0505.pdf>

² <http://www.netl.doe.gov/technologies/coalpower/ewr/mercury/pubs/NETL%20Clarification%20on%20Mercury%20FINAL%200406.pdf>

³ http://www.epa.gov/ttn/atw/utility/ord_whtpaper_hgcontroltech_oar-2002-0056-6141.pdf

demonstration. Currently none of these technologies are in commercial operation on power plants in the U.S.”⁴

Based on these assessments, state programs that include restrictive timeframes and facility-specific mercury limits will encourage fuel switching to high-priced natural gas, or may require existing coal-fired capacity to curb operations or shut down. In EEI’s view, this could be a scenario that occurs in Wisconsin. Under these circumstances, the likely end result will be the importation of coal-based power from electric generators outside of the State, and no corresponding improvement in air quality. Conversely, a national cap-and-trade program promotes fuel diversity, including continued use of the nation’s abundant and low-cost coal resources, and alleviates pressure on the nation’s natural gas supply.

Allowing several additional years to complete these massive construction projects ensures continued electric reliability, through the avoidance of having too many generating units off-line concurrently. The proper timeframe also will avoid labor and materials shortages, and minimize the financing challenges of such a capital-intensive mandate.

A Mercury Cap-and-Trade Program Will Not Cause “Hot Spots”

From a public health perspective, so-called mercury “hot spots” are areas with higher environmental mercury levels that could adversely affect public health. Some critics view emissions trading as “buying the right to pollute,” expressing concern that emissions trading could cause increased levels of mercury in the local environment.

In reality, mercury “hot spots” will not be created by a cap-and-trade program. As noted previously, cap-and-trade programs promote economically efficient decisions to reduce emissions from power plants. Units with the highest mercury emissions will be among the first to be controlled since the cost per pound of mercury controlled will be the lowest at these units. Based on many years of real-world experience, including studies of the acid rain allowance trading program conducted by EPA, the environmental group Environmental Defense and others, it is clear that trading did not significantly affect the pattern of where decreases in sulfur deposition actually occurred. The clear success of the acid rain SO₂ trading program provides reliable evidence to dispel fears about localized effects.

EEI believes there is no evidence of power plant-related mercury “hot spots” in the U.S. and associated increased risks to public health. While various groups have posed varying interpretations of what a “hot spot” could be, none of the interpretations are clear, consistent, or based on science.

There is no evidence that localized effects will occur with a mercury emissions trading program. To the contrary, a recent modeling study conducted to investigate the fate and transport of atmospheric mercury and its deposition in Michigan and the Great Lakes region found that mercury emissions from Michigan coal-based power plants

⁴ www.epa.gov/mercury/control_emissions/index.htm

contribute less than two percent to mercury deposition in northern Michigan, and less than five percent to deposition in central and southern Michigan. Mercury emissions from Michigan coal-based power plants are calculated to contribute between 0.5 and 1.5 percent to total mercury deposition over each of the Great Lakes and about two percent statewide.⁵

Other research indicates that most power plant mercury emissions are of the elemental form soon after release, and therefore enter the global pool instead of depositing nearby. For example, a study by Brookhaven National Laboratory found that only 4-7 percent of mercury is deposited locally (within 50 km). The study noted that "for the general population local deposition associated with the emissions from the coal-fired power plant were small," and that "estimated risks were more highly dependent on consumption patterns than increases in deposition due to coal-fired power plant emissions."⁶

Based on the current state of the science and extensive state-of-the-art modeling, EPA has demonstrated that there will be no utility-attributable "hot spots" after implementation of CAIR and CAMR. EPA's modeling has shown that CAIR greatly reduces utility-attributable mercury deposition throughout the Eastern U.S. and, after implementation of both CAIR and CAMR, no areas in the U.S. have increased mercury deposition relative to the levels of utility deposition in 2001.

EPA defines a "utility hot spot" as "a waterbody that is a source of consumable fish with Methylmercury tissue concentrations, *attributable solely to utilities*, greater than the EPA's Methylmercury water quality criterion of 0.3 mg/kg." [emphasis added] EPA analyses indicate that the drastic reduction in mercury deposited by utilities due to full implementation of CAIR and CAMR will not cause any utility-attributable fish tissue concentrations to exceed 0.3 ppm (mg/kg) anywhere in the United States. Therefore, CAIR/CAMR is designed to prevent any "utility hot spots" in the United States.

Specific controls anticipated to be adopted by utilities under the CAIR and CAMR are expected to preferentially reduce the forms of mercury that are of concern with respect to local deposition (non-elemental mercury), particularly oxidized mercury. EPA projects that utilities will install SCR and scrubbers to meet their SO₂ and NO_x requirements under CAIR and take additional steps to address the remaining mercury reduction requirements under CAMR, including adding mercury-specific control technologies, additional scrubbers and SCR, dispatch changes, and coal switching. Analysis performed by EPA concludes that implementation of CAIR alone will reduce oxidized mercury emissions by 62 percent.

Also contrary to the notion there are utility-attributable "hot spots" is the fact that mercury emissions from utilities in the U.S. represent only a portion of emissions, *i.e.*, approximately 20 percent of total North American emissions and about one percent of

⁵ Vijayaraghavan et al., *Modeling Deposition of Atmospheric Mercury in Michigan and the Great Lakes Region*, Atmospheric & Environmental Research, Inc., March 2004.

⁶ Sullivan, et al., *Assessing the Mercury Health Risks Associated with Coal-Fired Power Plants: Impacts of Local Depositions*, Brookhaven National Laboratory, May, 2003.

total global mercury emissions. Current research indicates that most of the mercury deposited in the U.S. – over 60 percent on average – comes from outside the country. According to EPA, about 144 tons of mercury from all sources (international, natural, U.S. electric power-related and other U.S. man-made) currently deposits in the United States.; only 11.1 tons of that total is from U.S. utilities. After CAIR and CAMR are fully implemented only 3.4 tons of mercury will be deposited by U.S. utilities. This is an important point because it is mercury that is actually deposited in the environment that is of concern.

CAMR is the Best Policy for Wisconsin

EEL recognizes the DNR's desire to craft state mercury emission regulation that meets environmental goals, but urges the State of Wisconsin to support national programs that offer the most effective means for meeting increasingly stringent air quality standards.

The cap-and-trade program of CAMR will provide tangible benefits for the public and the environment. CAMR sets a cap on mercury emissions in Wisconsin of 1780 pounds in 2010 and 702 pounds in 2018. Wisconsin's portion of the national cap (15 tons in 2018) is 2.3 percent of the total.

CAMR embodies realistic reduction requirements and reasonable deadlines for the utilities in Wisconsin, which will allow flexibility for technology investments and p.

In summary, the cap-and-trade program embraced by CAMR is a collaborative approach that balances a stringent national environmental policy with important considerations for states. In this case, the health of all citizens of Wisconsin will be safeguarded and electricity rates will remain stable.